

# THE IBIS.

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## ELEVENTH SERIES.

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VOL. I. No. 2. APRIL 1919.

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X.—*Some Notes on Hieraaëtus ayresi Gurney Sen.* (Lophotriorchis lucani Sharpe et auctorum). By C. G. FINCH-DAVIES, Lt. 1st S.A.M.R., M.B.O.U.

(Plate III.)

IN writing these notes on this handsome little Hawk-Eagle, I do so with the idea, firstly, of doing something towards reducing to order the confusion that has occurred in the past between this species and *Hieraaëtus spilogaster* Du Bus. Secondly, in the hope that ornithologists at home, who have better opportunities and more material to work on than myself, may be able to add still further to our knowledge, and clear up any obscure points. Thirdly, to place on record the occurrence of this species in South Africa.

All my life I have been particularly interested in the "Birds of Prey," and during the last ten years have devoted especial attention to the South African species and have filled numerous sketch-books with paintings of them in various stages of plumage, and as a result of this and the examination of a large number of specimens, I have got to know the various species fairly well.

In February 1909, while stationed in eastern Pondoland, I received from a friend, who unfortunately was not very good at skinning, a somewhat mangled skin of a small

Hawk-Eagle, which I identified at the time as a small male of *Hieraaëtus spilogaster*, although with a considerable amount of doubt, as it did not agree very well with Selater's description of that species (Fauna of South Africa, Birds, iii. p. 299), and was, moreover, much smaller in every way than the dimensions given, and in fact much smaller than an adult female *H. pennatus* which I had shot a few days previously. I was, however, more satisfied when, a year or so after, I saw in the South African Museum at Cape Town, a very similar but rather larger specimen labelled *H. spilogaster*. In the meantime I had become fairly well acquainted with the true *H. spilogaster*, and as I never again met with a specimen agreeing either in size or colouring with the Pondoland or Cape Museum specimen, I began to think that either *H. spilogaster* was very variable in plumage or else there must be another species occurring in South Africa which had been confused with it. So when in Cape Town in 1915 I took the opportunity of re-examining the specimen in the Museum, and preparing a painting of it; I sent the painting and a description to Mr. Austin Roberts of the Pretoria Museum, and asked him if he could put me right. Mr. Roberts very kindly went into the subject for me, and pointed out that there was no doubt that the Cape Town specimen, and probably my Pondoland specimen also (which unfortunately I had not kept) belonged to *Lophotriorchis lucani* Sharpe, and also drew my attention to the fact that *L. lucani* and *H. spilogaster* had been confused by Erlanger, who, in the J. f. O. 1904, had figured the former as *H. spilogaster* and the latter as *H. fasciatus minor*. On examining these plates I saw at once that the Cape Town bird agreed fairly well with the lower figure in Erlanger's plate of *H. spilogaster*.

I now realized that here was the solution of my difficulties, and, on thinking the matter over, decided to send descriptions of *L. lucani* to the various museums in South Africa with a view to finding out whether there are other specimens. The result was most gratifying, as I found that every one of the following museums, viz. South African Museum in

Cape Town, Port Elizabeth Museum, Albany Museum in Grahamstown, Natal Museum in Pietermaritzburg, and Durban Museum, had specimens of *L. lucani*, and the Directors of these museums were most courteous in sending the details, and in several cases specimens for examination. I give details of these specimens below :—

South African Museum, Cape Town.—One specimen, adult, and presumably a female. Wing 16 inches. Collected at Feira on the Zambezi by Dr. Stoehr, 26. ii. 1904.

Transvaal Museum, Pretoria.—One specimen, adult female. Wing 16 inches. Collected by Mr. C. H. Taylor at Indhlovodwalile in Swaziland, 25. vii. 06. I have examined this specimen, which appears to be abnormal in more ways than one. In colouring it appears to be melanistic, the whole plumage being dark, especially on the underparts, where the black markings predominate to such an extent that the colour appears almost entirely black, varied with white spots. So dark is the bird that it was originally labelled *Lophoaëtus occipitalis*. The dark bars on the tail are somewhat distorted. The centre claw of each foot is deformed, on one foot a mere vestige, on the other turned up the wrong way; it does not look as if this had been caused by a trap.

Albany Museum, Grahamstown.—One specimen, female juv. Wing  $16\frac{1}{4}$  inches. Collected in the Grahamstown district. I have examined this specimen.

Port Elizabeth Museum.—One specimen, female juv. Wing 16 inches; plumage somewhat worn. Shot in Port Elizabeth district. I have examined this specimen.

The Director in writing of this specimen notes: "in size it agrees with *H. pennatus*, but the toes are nearly twice as large."

Natal Museum, Pietermaritzburg.—From descriptions sent me by the Director, there would appear to be about six specimens in the Museum collected in various parts of Natal. Wing-measurements varying from  $16\frac{1}{4}$  to 15 inches.

Of two of these I have had photographs sent me ; both are undoubtedly referable to this species. One is a young bird, the other moulting into adult plumage.

Durban Museum, Durban.—One specimen, apparently an adult female. I have not seen this specimen, but the Director, Mr. E. C. Chubb, writes to me as follows: "We possess a mounted specimen of a *Hieraaëtus* which has long puzzled me, the wing-measurement is  $17\frac{3}{4}$  inches. The colour above is brownish black, most of the feathers tipped with white, including the nape, scapulars, coverts, secondaries, and upper tail-coverts. Most of the feathers have indistinct greyish bands about the middle of their length, and are white near the base. Head very dark brown, some of the feathers very slightly tipped with white, a crest about  $1\frac{1}{2}$  inches long. Tail  $8\frac{1}{2}$  inches. Feathers of tail dark brown with about four pearl-grey bands and tipped with white. Cheeks black ; throat, under surface of body, under tail- and wing-coverts white, densely spotted with black."

The wing-measurement given above seems very large ; perhaps there is some error, but the colouring, especially of the cheeks and under surface, and the crest leave no doubt in my mind as to the species.

I will now discuss the question as to what name this species must bear in the future. I will first take the generic name. The genus *Lophotriorchis* was proposed by the late Dr. Bowdler Sharpe in the first volume of the Catalogue of Birds for the reception of two species of Crested Hawk-Eagle (*L. isidori* and *L. kieneri*), and when later he described the present species, he referred it to the same genus. I have no knowledge of the two above-mentioned exotic species, but after a careful examination of several examples of the present species, it seems to me that it is congeneric with the species usually referred to the genus *Hieraaëtus*, such as *pennatus*, *fasciatus*, *spilogaster*, etc. Certainly it has a short crest, but so also have *H. morphnoides* of Australia and *H. wahlbergi* of Africa (if the latter can be referred to this

genus, which is doubtful). So that in my opinion this species should be placed in the genus *Hieraaëtus*.

Now as to the specific name. As is well known to most ornithologists who have studied African birds, the Hawk-Eagle described by the late J. H. Gurney (*Ibis*, 1862, p. 149, pl. iv.) as *Spizaëtus ayresii*, has usually been referred to as the young of *H. spilogaster*. Now this description and plate have always puzzled me, until lately, as since I had got to know *spilogaster* in all stages of plumage, I had never seen a specimen quite agreeing with either description or plate, especially as I had never met with a specimen with a crest. As soon as Mr. Roberts put me right regarding *L. lucani*, as above mentioned, it struck me at once that here, very likely, was the solution of my doubts about Gurney's *S. ayresi*, and I became almost sure that *S. ayresi* Gurney would prove to be the young of *L. lucani* Sharpe. I was all the more inclined to this belief when I noticed in the late Mr. Gurney's "List of the Diurnal Birds of Prey, etc." p. 52, a footnote referring to *H. spilogaster*, in which the following occurs: "The immature specimen figured under the incorrect appellation of *Spizaëtus ayresi* in the 'Ibis' for 1862 is one of those in the Norwich Museum. The type-specimen of *Lophotriorchis lucani* of Sharpe and Bouvier, which is preserved in the British Museum, *also seems to me to be a young N. spilogaster*" (the italics are mine), from which it appeared to me that Mr. Gurney had noticed that his *S. ayresi* and Sharpe's *lucani* were identical.

However, my doubts were quite set at rest when I received a young specimen of *L. lucani* from Grahamstown, now in the Albany Museum, which agreed perfectly with both Gurney's description and plate. And therefore, as Gurney's name has considerable priority over that of Sharpe and Bouvier, I have great pleasure in restoring it to this handsome little Eagle, especially as the late Mr. J. H. Gurney, as well as being one of the original members of our Union, was our best authority on the birds of prey, and Mr. Tom Ayres, after whom this Eagle was named, was one of our

oldest and best South African field ornithologists. Therefore this Hawk-Eagle must in future be known as

*Hieraaëtus ayresi* Gurney. Ayres's Hawk-Eagle.

(Pl. III.)

*Description.* Adult female. Feira, Zambezi, 26. ii. 1904.

Head, including crest  $1\frac{3}{4}$  inches long, and cheeks black, the bases of all the feathers white, a few white streaks on the cheeks next the throat, the black of the head gradually fading into dark sepia-brown on the mantle. The earliest scapulars white, forming a shoulder-patch, as in *H. pennatus*. The rest of the scapulars dark brown, with more or less concealed brownish-grey spots or bars towards the base, the extreme bases white. Primaries black at tips, hoary grey on outer web towards base, inner webs white barred with brownish black. Secondaries greyish brown, barred with brownish black, and with whitish tips; wing-coverts dark brown tipped with whitish, the greater series showing greyish bars. Under surface of wings white, spotted with black. Throat and whole under surface of body white heavily marked with brownish black, more in the form of streaks on the throat and in the shape of spade-shaped markings and bars on the sides of the breast and flanks. The thighs the same but the markings browner. The tarsi streaked. Under tail-coverts white with subterminal bar of dark brown, and a second bar of the same colour about halfway towards base. Upper tail-coverts dark brown, with whitish bars at tips. Tail grey, tipped with white, and with a broad subterminal bar and four narrower bars of brownish black.

Bill blue-grey tipped with black; cere and feet yellow; irides yellow.

Length 22 inches, wing 16, tail 9, culmen 1, tarsus  $2\frac{3}{4}$ .

Gurney's original description of *S. ayresi* describes a young bird perfectly.

I will now try to point out the characters by which this species can be distinguished from *H. spilogaster*, but before doing so I would like to mention that, although I have only been able so far to examine five specimens of *H. ayresi*.



HIERAAETUS AYRESI

three adults and two young, I have seen numerous specimens of *H. spilogaster* in all stages of plumage, living, dead, and skins.

In the first place, *H. ayresi* has a distinct crest  $1\frac{1}{4}$  to  $1\frac{3}{4}$  inches in length, but in mounted specimens and skins this is not always apparent unless looked for. *H. spilogaster* never has a crest, although, like many birds of prey, when angry or excited, it sometimes raises the feathers of the nape, giving a slightly crested appearance. Therefore, I venture to say, that all Hawk-Eagles that have so far been identified as *H. spilogaster*, if they have a crest will be found to be referable to *H. ayresi*.

Secondly, the question of size: *H. ayresi* is a smaller bird than *H. spilogaster*, but I am not quite sure whether it is a question of wing-measurement alone, as it has seemed to me that *H. ayresi* has a longer wing, in proportion to its size, but I have been handicapped in this matter by the fact that some of the specimens I have examined have apparently been wrongly sexed, as all have had approximately the same wing-measurement, *i. e.* 16 inches. I think we may safely say that the male of *H. spilogaster* and the female of *H. ayresi* are about the same size. It seems to me, however, that *H. ayresi* is a rather differently proportioned bird to *H. spilogaster*, having a longer tail and shorter legs than the latter, and more like *H. pennatus* in general appearance. Other differences that have struck me I give in the following parallel columns:—

*Adults.*

*H. ayresi.*

General colour above dark sepia-brown; head black, feathers of scapulars and greater wing-coverts with more or less concealed spots or bars of brownish grey, only extreme bases white. Many of these feathers tipped with whitish in fresh plumage.

Ear-coverts and cheeks black, very slightly streaked with white next throat.

*H. spilogaster.*

General colour above black or brownish black. The head the same colour as rest of upper surface, conspicuously varied on scapulars and wing-coverts, with white bars and mottling towards bases of feathers. These feathers never tipped with whitish.

Ear-coverts and cheeks white, streaked with black.



*H. ayresi.*

General colour of under surface white, heavily marked with black in the form of spade-shaped spots and bars, including thighs; the tarsi streaked.

Under wing-coverts white, spotted with black.

Smallest scapulars white, forming a shoulder-patch as in *H. pennatus*, not always apparent in skins unless looked for.

*H. spilogaster.*

General colour of the under surface white, streaked on the throat, breast, and flanks with black, the streaks broadest on breast and flanks; abdomen and thighs with only narrow streaks, sometimes immaculate; tarsi immaculate.

Under wing-coverts white, but with a large black patch formed by the broad subterminal bands on the larger coverts.

No white patch on the scapulars.

The differences between the young birds, although very distinct when the two species are compared, are not so easily described, as they are more a question of shade of colouring and shape of markings. The fact that *H. ayresi* at all ages possesses a crest, and also the white shoulder-patch, should be sufficient to distinguish it, though as I have said before, neither of these points are always apparent in skins. I will, however, try to give the differences in colouring as well as I can. *H. ayresi* is generally paler in colour above, though this depends somewhat on whether the feathers of either species are fresh or worn; it has, however, a conspicuous whitish-buff forehead and eyebrow, both of which are absent in *H. spilogaster*. In *H. ayresi* the secondaries are uniform dark brown without bars on the outer web. In *H. spilogaster* these are grey barred with dark brown, the grey fading to pale brown when the feathers become bleached.

In *H. ayresi* the general colour of the under surface is pale buff, darker on the sides of the breast, almost white on the abdomen and thighs, with almost spade-shaped marks of brown on the sides of the breast and narrow shaft-streaks on the centre of the breast and upper abdomen. The flanks with broader streaks and almost bare of dark brown. In *H. spilogaster* the general colour of the under surface is rufous-

buff, almost brownish rufous on the upper breast and fading into buff on the thighs and abdomen, broadly streaked with dark brown on the breast, and more narrowly on the flanks and upper abdomen; all these streaks are spear-shaped, and on the sides of the upper breast only the edges of the feathers are rufous.

How *H. ayresi* originally became confused with *H. spilogaster* I am not sure, but I think perhaps the late Dr. P. L. Selater may have been responsible, as I have found the following in the volume of 'The Ibis' for 1864, where Dr. Selater, in describing a collection of birds made by Dickinson on the Zambezi, makes the following remarks under the head of *S. spilogaster* (p. 304):—"This very interesting series shows that Mr. Gurney's *S. ayresi* is the immature form of *S. spilogaster*. Wolf's plate in the 'Ibis' represents the immature plumage in nearly every respect, except that Dr. Dickinson's specimens show still less signs of a crest than are depicted in the plate of *S. ayresi*, and the still younger bird has the under surface uniform brown, with scarcely a single indication of spots. In the youngest specimens . . . the under surface becomes white densely spotted with black spots, the tail being also strongly barred across. In the perfectly adult the spots wear off, and the bird becomes white beneath, with spots only on the breast and flanks. In this plumage the tail has a broad subterminal black bar."

From the above it seems clear to me that Dr. Selater had before him both adult and young specimens of *H. ayresi* and *spilogaster*. Again, Gurney in his excellent Notes on Sharpe's 'Catalogue of Accipitres in the British Museum,' writes as follows (Ibis, 1877, p. 421):—"There is, however, a variation in the markings of the under surface in specimens of *N. spilogaster*, to which I am desirous of briefly alluding. Two distinct phases of such markings occur in adult specimens, or at least in specimens which are so far adult as to have passed beyond the stage of plumage which characterizes this Eagle in its first year . . . . Thus in some individuals the white of the underparts is merely interspersed with sparse and narrow dark shaft-marks . . . . whilst in other specimens

the dark markings on the under surface are much more numerous and also very much broader.”

As late as 1904, Erlanger again confused the two species, as I have already mentioned. This was pointed out by Neumann in the Bull. B. O. C. xvi. 1906, p. 112.

I will now give some of the references which I consider applicable to this species, but as my scientific library is somewhat limited, I must be forgiven if my list is far from complete :—

*Spizaëtus ayresii* J. H. Gurney Sen., Ibis, 1862, p. 149, pl. iv.

Plate and description of young or immature specimen. Collected by T. Ayres in Natal.

*Spizaëtus spilogaster* P. L. Selater, Ibis, 1864, p. 303 (part).

*Lophotriorchis lucani* Sharpe & Bouvier, ‘Bulletin de la Société Zoologique de la France,’ 1877, p. 471.

Description of young or immature from Landana, Portuguese Congo.

*Nisaëtus spilogaster* Gurney, ‘List of Diurnal Birds of Prey,’ 1884, p. 52, and footnote (part).

*Aquila wahlbergi* Sharpe, Ibis, 1898, p. 573.

Under this name Sharpe describes a specimen of a Hawk-Eagle, collected by Sowerby in Mashonaland, as follows :—“This is a very curiously coloured individual and is evidently, in my opinion, an immature bird, but it differs from all our specimens in the British Museum in being white underneath with a few arrow-shaped black streaks and bars. The upper surface is also mottled with white tips; the crown is white streaked with dark brown, with a very evident crest of pointed brown feathers.”

I think this specimen is probably referable to *H. ayresi*; it is certainly not *H. wahlbergi*.

*Lophotriorchis lucani* Shelley, Ibis, 1901, p. 594.

Describing a collection of birds from Nyasaland, Shelley writes as follows :—“This small Eagle somewhat resembles *Aquila wahlbergi* in size and in having a short crest on the hinder part of the crown, but may readily be distinguished

from that bird and from *N. pennatus* by having seven distinct dark bars across the tail and some blackish bars on the inner lining of the wings. *Lophoaëtus occipitalis*, the commonest little Eagle in the Nyasa district, has an extremely long crest, much darker plumage, and the tail crossed by only four dark bands. *L. lucani* in the pattern of the tail and under surface of the wings resembles the immature stage of *N. spilogaster*, but is a very much smaller bird, with the wing not more than 15·5 inches, which is the measurement of the wing of a specimen from Delagoa Bay, while in the type from Landana it is 14·6 inches, and in the present specimen only 13·7 inches."

From the above it would appear that Capt. Shelley had only seen immature specimens, and probably males judging from the wing-measurements, especially of the last.

*Lophotriorchis lucani* Sharpe, Ibis, 1904, p. 102.

Here Sharpe describes a specimen collected by Bates in the Cameroons as follows:—"♂ ad. Efulen, April 10, 1902, native name 'Ze-yôp.' The adult plumage of this interesting Hawk-Eagle has now been ascertained for the first time, and a brief description of it has been given, Bull. B. O. C. xii. 1902, p. 79. The general colour is black, with broad brown or greyish-brown bands on the scapulars, quills, and tail-feathers; sides of face black; under surface pure white, with a black patch on each side of the breast and black axillaries; thigh-feathers and under tail-coverts with large terminal black spots; under wing-coverts mostly black; quills white below with black tips and more or less remains of narrow black bars. Total length about 20 inches, culmen 1·45, wing 13·2, tail 8·5, tarsus 2·75."

Professor Neumann, in the Bull. B. O. C. xvi. 1906, p. 112, has stated his opinion that this specimen is in reality a small male of *N. spilogaster*. I rather doubt this, and the specimen should be re-examined.

*Hieraaëtus spilogaster* Erlanger, J. f. O. 1904, p. 184, pl. ix.

As mentioned before, Erlanger has figured this species under the above name from a pair collected in Somaliland.

*Eutolmætus spilogaster* P. L. Selater, Bull. B. O. C. xv. 1905, p. 67.

Dr. Selater exhibited and made some remarks on a Hawk-Eagle collected by Dr. Stoehr on the Zambezi, sent to him for identification by the South African Museum, Cape Town. He identified this specimen as *E. spilogaster*. This specimen is now mounted in the South African Museum, and is the original of my figure.

*Lophotriorchis lucani* Neumann, Bull. B. O. C. xvi. 1906, p. 112.

Professor Neumann exhibited a specimen from the late Freiherr C. von Erlanger's collection and stated that this was the first adult of this species he had seen, as he considered that the so-called adult specimen described by Sharpe was nothing but a male of *N. spilogaster*.

After pointing out Erlanger's mistake mentioned above, he went on to describe the following characters by which the two species might be separated. The colour of the under wing-coverts showed a large black patch in *spilogaster*, while those of *lucani* were white with numerous black spots. There was also an obsolete white shoulder-patch in *lucani* just as in *H. pennatus*, and it had been suggested by Kleinschmidt that *lucani* might be the African representative of *H. pennatus*. *L. lucani* was now known from Landana, Togoland, Mozambique, and South Somaliland.

*Hieraaëtus lucani* Zedlitz, J. f. O. 1910, p. 374.

Here Zedlitz quotes Neumann's remarks above, and gives details of some specimens of this species which he had examined.

*Lophotriorchis lucani* Claude Grant, Ibis, 1915, p. 245.

Grant describes a specimen collected by Capt. Cozens in Uganda as follows:—"Length in flesh  $21\frac{1}{4}$  inches, wing 395 mm. In clean, apparently first dress, having light tips to the feathers of the head, back, wings, and rump. Irides yellowish brown, cere greenish, bill blue, tip black, feet pale yellow."

I have been unable to find anything of any interest recorded with regard to habits. Bates mentions that his Cameroon specimen had remains of some sort of squirrel in its stomach. My friend who sent me the specimen from eastern Pondoland, stated that this was one of a pair which had been chasing his tame pigeons. Judging by its proportions and likeness to *H. spilogaster*, I should think that, like that species, it was probably a highly predaceous species, preying on such birds and mammals as partridges, pigeons, hares, etc.

The distribution of this Eagle would appear to extend from Somaliland on the east and Togoland on the west, southwards probably as far as the Cunene River, on the west, then along the Zambezi, and through the eastern districts of South Africa as far as Port Elizabeth.

In concluding these notes I must ask to be forgiven if there is a lack of concise ideas, as I am no writer. I trust, however, that my words, and the accompanying plate, will lead to a better knowledge of this Eagle.

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XI.—*Note on certain recently described Subspecies of Woodpeckers.* By H. C. ROBINSON, M.B.O.U., C.M.Z.S.

IN a recent number of this Journal (1918, pp. 107-109) Mr. C. Boden Kloss has described four additional subspecies of the Bay Woodpecker (*Micropternus brachyurus*) for which, however, in three cases no types have been designated, which is contrary to all modern practice.

As I have recently had access to the entire material on which these races are based and many additional skins, as well as to the important papers of Hesse\* which were not available in the Malay Peninsula at the time Mr. Kloss wrote his paper, the following remarks may tend to elucidate matters.

\* Berlin Mitt. Zool. Mus. vi. 1912, pp. 131-261.